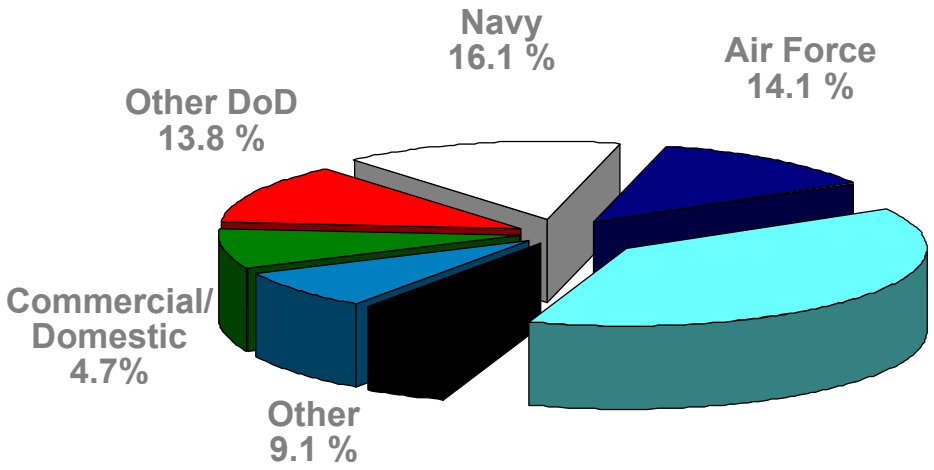
Honeywell Technology Solutions Inc.

HTSI DataLynx Capabilities
March 2003
Stephanie Gonzales

Honeywell Technology Solutions Inc.

HTSI Customer Base



Current as of Mar 2003

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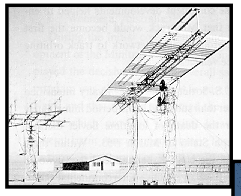
HTSI's Space Operations History

IMP-8
ICE
IUE
HCMM
SAGE
ASPC



MINI
Track

TIMATION
I & II

PIONEER

ERBS

COBE

TDRSS

SOHO

SSTI/Lewis

RADARSAT

SAMPEX

MSTI

Clementine

ROCSAT

IRIDIUM

QuikScat

NASA STDN

NASA DSN

NASA SN

USAF SCN

ROCSAT

LEO-T

DATALYNX

Full Life Cycle Involvement
- Concept Definition to Retirement
- Ground and Space System Development
- Requirements, Development, Integration, Test

Landsat7
TERRA
EO-1
AQUA
AURA
ICESat
QuikSCAT
WIRE
GRACE 1&2

Over 700 Spacecraft Since 1958 in Every Orbit, Application, and Configuration

Deep Space	Remote Sensing
Intelligence	Space Physics
Smallsats	Defense
Astrophysics	Earth Science
Communications	

The Most Experience In The Aerospace Community

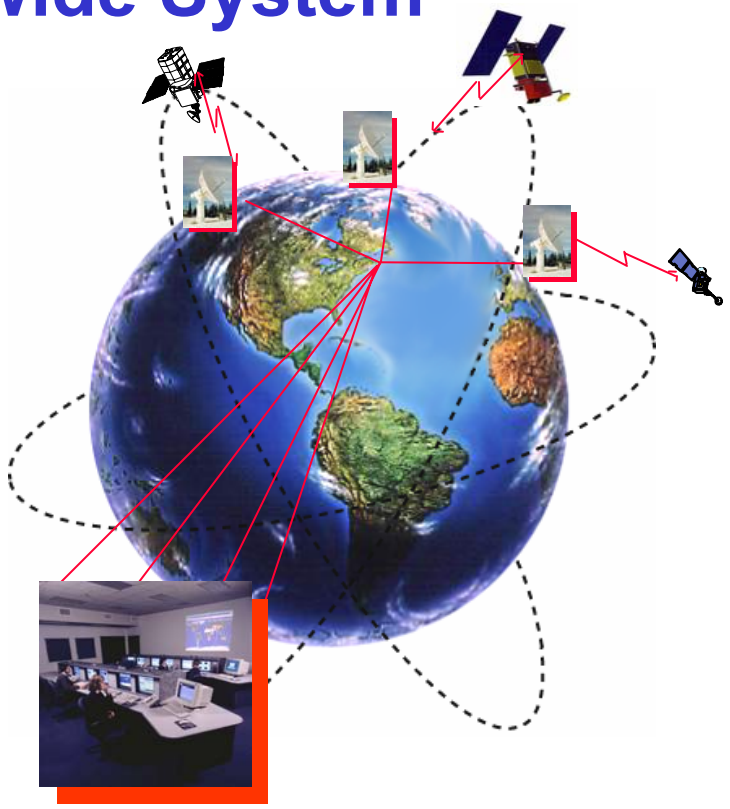
Current as of Mar 2003

DataLynx's Worldwide System

DataLynx Charter

Provide cost-effective; fee for service space operations and telemetry, tracking and control (TT&C) capabilities to support "earth-orbiting" or similar assets.

- Manage the development and operation of a worldwide ground network of DataLynx owned and partner tracking stations
  - Provide turn-key systems (or system components) with custom solutions as required with a goal towards developing and expanding network
- Development and operation of satellite operations teams and operations control facilities to support multi-mission commercial customers
- Establish a worldwide data distribution and processing network for asset data capture, archival and delivery of data to and from the customer



DataLynx Service Offerings

- **Tracking, data acquisition, and commanding (TDAC)**
- **Satellite asset management and operations (SAMO)**
- **Data management and processing (DP/DM)**

Current as of Mar 2003

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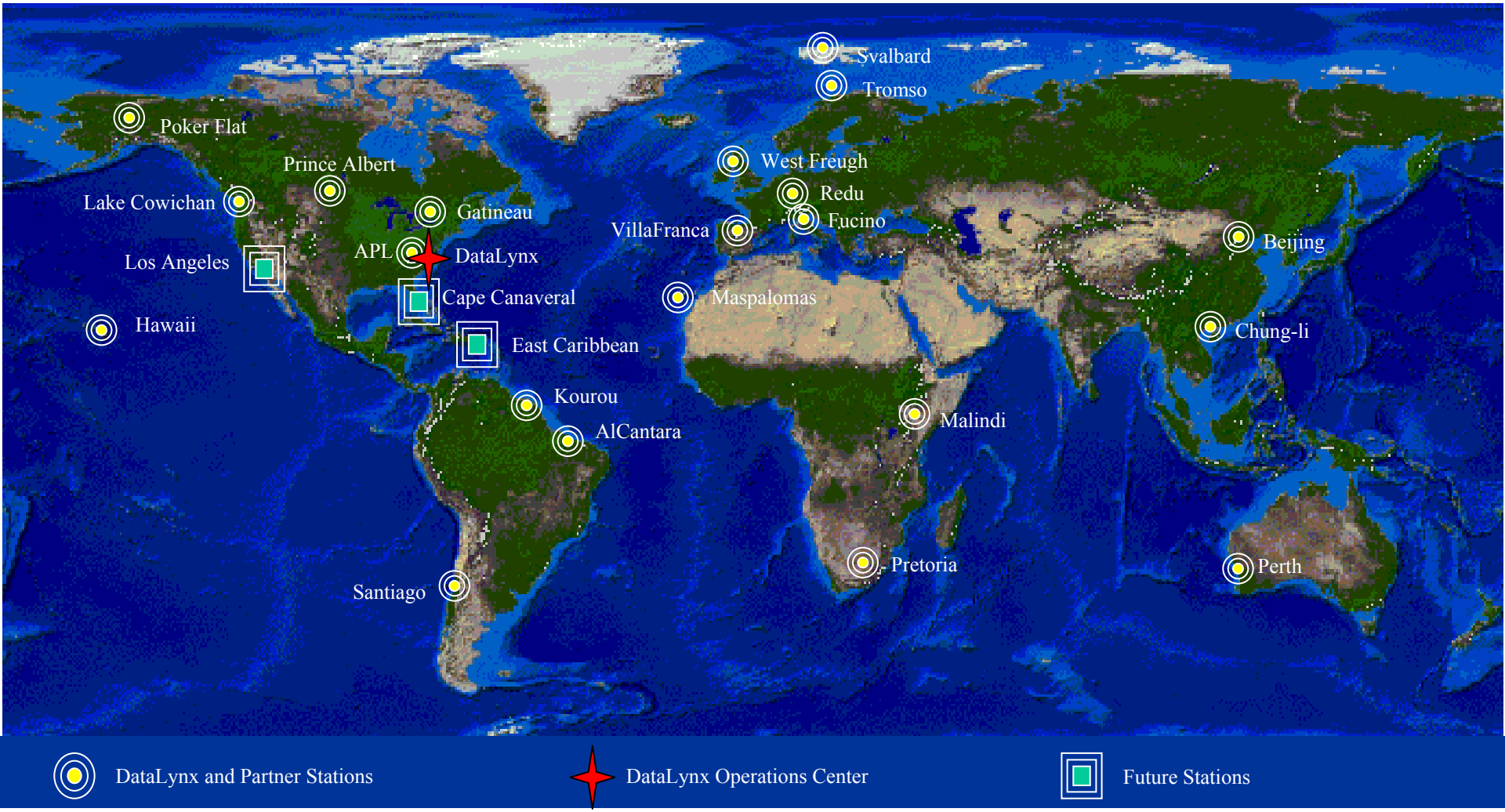
DataLynx Commercial Network



Current as of Mar 2003

DataLynx Ground Station

System Attributes

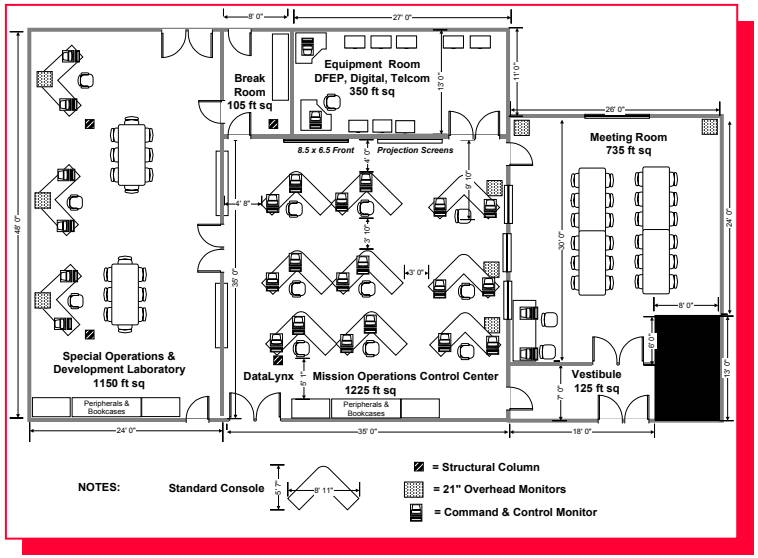
- 11 Meter S/X-Band Antenna
- Designed to support remote sensing missions (Landsat-7, Terra, Aqua, EO-1, IceSAT, QuikSCAT)
- Data Rates up to 400 Mbps (200Mbps per channel) (Upgradable to 640 Mbps; 320Mbps per channel)
- Real-time data quality metrics
- Remote Operations/Diagnostics From Centralized Facility
- Automated Fault Detection, Isolation and Resolution
- Data Storage via RAIDs to Media or Data Link
- Dedicated Data Lines to Stations Ensures Online Resources
- Commercial Communication Transport Channels
- Direct Interface to NASA's NISN
- Compatibility Test Suite Available

Operational Status

- First Commercial Station On NASA's Core Network
  - First Commercial Provider with Full NASA Security Certification
  - NASA Tracking Certification
- Currently supporting 8 NASA and 2 ESA missions
- Global network of partner stations

Current as of Mar 2003

DataLynx Operations Center



System Attributes

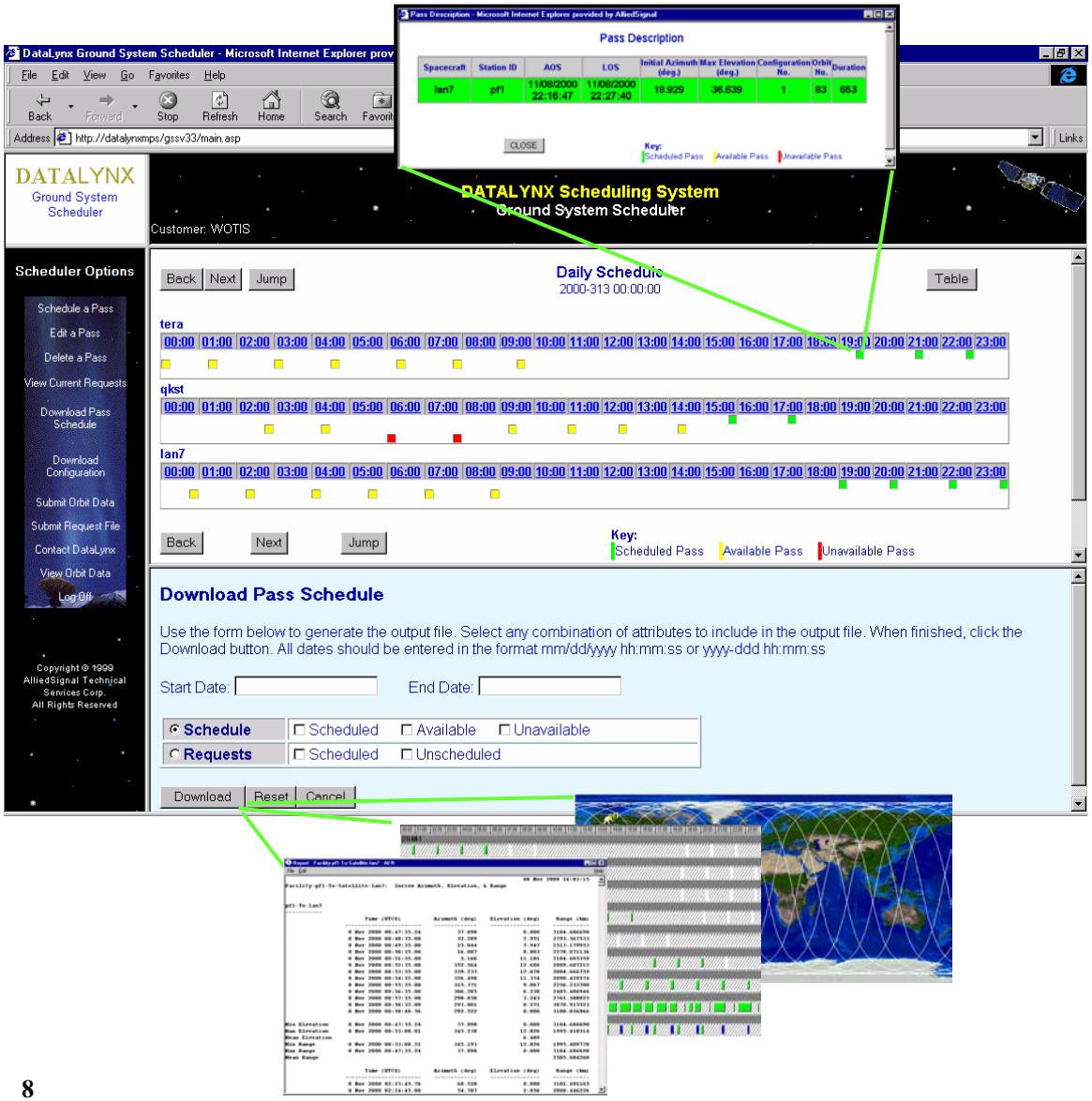
- Multi-Satellite and Constellation Capability
- Low Staffing Requirements
- Automated Software Functionality
  - Command Generation and Formatting
  - Orbit Determination , Propagation, Maneuver Planning
  - Anomaly Recognition/Resolution
  - Resource Scheduling
- Remote Operations
  - TLM Monitoring, Planning, CMD Generation
- Variable Data Links to Customers
  - Dial-In Capability
  - Internet Accessibility
- Data Archiving with Online Data Retrieving
- Data Encryption Available
- 24x7 Operations Support in a Secure Facility with Backup Power Generators

Operational Status

- Operating DataLynx Ground Network 24x7
- Providing backup MOC support for Landsat-7 and EO-1
- Selected for Kepler Mission Operations Services

Current as of Mar 2003

DataLynx Customer Interfaces



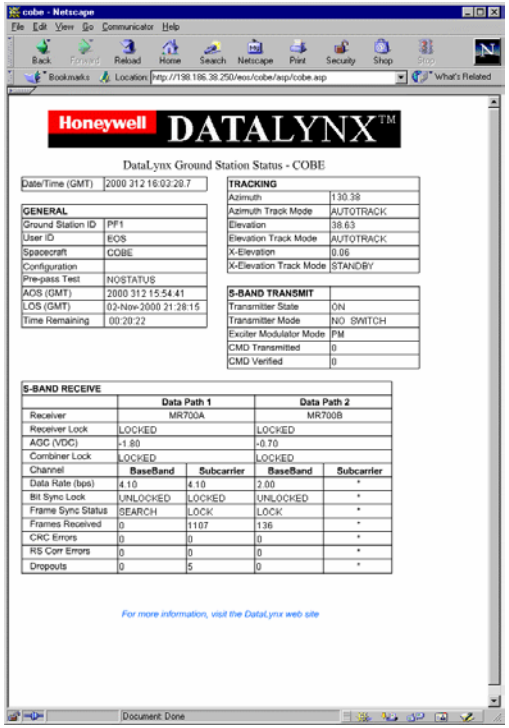
Easy access to DataLynx stations through secure Web page

Ground Station Scheduler

- Passes available
- Pass parameters
- Station configuration selection
- Orbit data

Real-Time Status Display

- Critical Ground Station Status Points
- Frame Capture
  - On-Site Video Feed
  - Spectrum Analyzer



Current as of Mar 2003

DataLynx Features

Service Offering

- Ground Station Passes
  - Automated TT&C passes
  - Robust Scheduling Interface
  - Web telemetry monitoring
  - Compatibility testing
  - Use of Partner sites for LEOP anomalies, & augmented service
  - Backup or LEOP supplemental support
- Flight Operations (DOC)
  - Main Operations Center in Columbia, MD
  - Real-time flight operations
  - Mission Planning & Scheduling
  - Orbit determination & propagation
  - Options for data processing
  - HTSI maintains design via shared sustaining engineering efforts

Complete System

- Leverage HTSI Corporate Design to provide dedicated ground network & control
  - Co-locate at DataLynx sites
  - Ability to sell excess capacity through DataLynx
  - Co-locate at customer processing facility

Future Expansion

- Willing to augment capabilities to meet customer needs:
  - L band
  - Ka band
  - Ku Band
  - X-band Uplink

Service Offering Tailored to Meet Customer's Requirements

Current as of Mar 2003